

Use systems of equations to solve.

11) A music store is selling compact discs for \$10.50 and \$8.50. You buy 10 discs and spend a total of \$93. How many of each priced disc did you buy?

12) You are taking a test worth 250 points. There are 68 questions. Some of the questions are worth 5 points and the rest are worth 2 points. How many of each question are on the test?

Tell how many solutions each system has. (No solution, Exactly one solution, or Infinitely many solutions)

$$\begin{aligned} 13) \quad 3x + 2y &= 12 \\ 9x + 6y &= 18 \end{aligned}$$

$$\begin{aligned} 14) \quad 3x + 6y &= 30 \\ 4x + 8y &= 40 \end{aligned}$$

$$\begin{aligned} 15) \quad 3x + y &= 9 \\ 2x + y &= 4 \end{aligned}$$

Simplify each expression. Answers should be written as a power with **positive** exponents.

$$16) \quad 3^4 \cdot 3^6$$

$$17) \quad (m^3)^5$$

$$18) \quad \frac{p^5}{p^{11}}$$

$$19) \quad (4x^7y^2)^3$$

$$21) \quad (-6s^3t)^2 \cdot (9s^2t^4)^3$$

$$22) \quad \frac{5x^{-3}y^4}{x^2y^{-1}} \cdot \frac{(3x^2y^2)^3}{x^3y}$$

Rewrite each number in standard form.

22) 8.6521×10^3

23) 4.73×10^{-4}

24) 4.332×10^8

Rewrite each number in scientific notation.

25) 0.0729

26) 88,000,000

27) 0.00000257

Simplify. Rationalize if necessary.

28) $\sqrt{50}$

29) $\frac{\sqrt{20}}{4}$

30) $\frac{\sqrt{3}}{\sqrt{4}}$

31) $\frac{-2\sqrt{20}}{\sqrt{100}}$

Solve each equation by finding square roots or by using the quadratic equation.

32) $8x^2 = 32$

33) $2x^2 - 89 = 9$

34) $x^2 + 9x + 14 = 0$

35) $4x^2 - 13x + 3 = 0$

36) $2y^2 = 4y + 30$

37) $2q^2 + 4q - 6 = 0$

Use the discriminant to determine how many solutions each equation has.
(One Solution, Two Solutions, or No Real Solutions)

38) $2x^2 - 2x + 3 = 0$

39) $x^2 - 3x - 4 = 0$

40) $-x^2 + 2x - 1 = 0$

Find the product for each.

41) $(x - 9)(2x + 15)$

42) $(3m + 4)^2$

43) $(v + 6)(v^2 - 6v - 2)$

Factor each using any method.

44) $x^2 + 4x - 12$

45) $x^2 - 2x - 48$

46) $2x^2 + 19x + 24$

47) $4n^2 - 36$

48) $2y^3 - 10y^2 - 12y$

49) $a^2 - 14a + 49$

50) $3y^3 - y^2 - 21y + 7$

Algebra - Exam Review

Name _____

Solve each inequality.

1) $2y - 5 < 7$

2) $2a - 4 \geq 4a - 1$

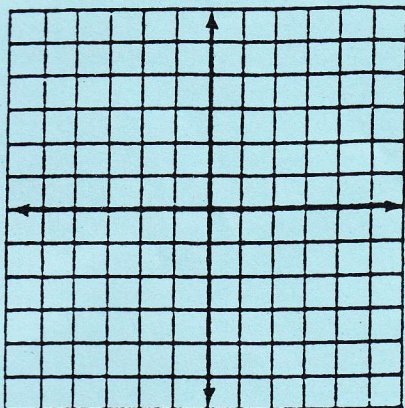
3) $-5 \leq 2x + 3 < 7$

4) $-3x - 7 \geq 8$ or $-2x - 11 \leq -31$

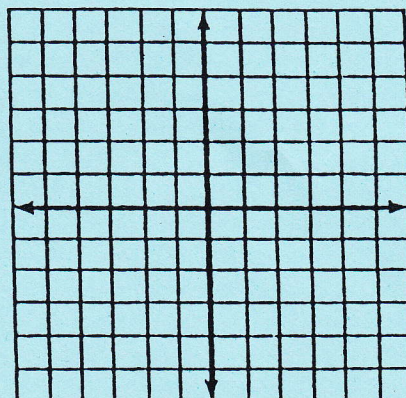
5) $|2m - 7| - 5 = 4$

Graph the equations to solve the system. Write your answer as an ordered pair.

6) $x - y = 1$
 $5x - 4y = 0$



7) $y = -x + 3$
 $y = x + 1$



Solve each system using any method. (Substitution, Graphing, Elimination)

8) $2x + 3y = 31$
 $y = x + 7$

9) $x + 7y = 12$
 $3x - 5y = 10$

10) $-12x + y = 15$
 $3x + 2y = 3$